

ORGANIZATION AND MANAGEMENT OF A TECHNICAL WRITING COMPANY

E. Paul
26
12
T

A Thesis

Submitted in partial fulfillment
of the requirements for the Degree
of Master of Science in Industrial Management

by

Montague L. Boyd, Jr.

Georgia School of Technology
Atlanta, Georgia
1946

ORGANIZATION AND MANAGEMENT OF A TECHNICAL WRITING COMPANY

Approved:

Date Approved by Chairman

1 2-2-1947

TABLE OF CONTENTS

CHAPTER	PAGE
FOREWORD	vi
INTRODUCTION	1
I. GENERAL.	5
INDUSTRIAL MANUALS -- A DESCRIPTION OF THE PRODUCT	5
WHO WRITES INDUSTRIAL MANUALS.	10
II. ORGANIZING THE TECHNICAL WRITING COMPANY	13
TYPE OF ENTERPRISE	13
BALANCE SHEETS AND COST OF EQUIPMENT	14
LAYOUT OF OFFICES.	18
OFFICE LOCATION.	20
III. DESCRIPTION OF WRITING PROCESS	22
IV. MANAGEMENT AND LABOR	27
ORGANIZATION	27
WAGES	30
JOB SPECIFICATIONS	32
INCENTIVE PLAN	41
V. MARKETING.	44
SALES ORGANIZATION	44
PRICING POLICY	45
ANALYSIS OF THE MARKET FOR INDUSTRIAL MANUALS IN GEORGIA	48
BIBLIOGRAPHY	67

LIST OF TABLES

	PAGE
TABLE I COST OF EQUIPMENT	17
TABLE II LABOR REQUIREMENTS	28
TABLE III PREVAILING WAGE RATES	30
TABLE IV SALARY AND WAGE RATES	31
TABLE V DISTRIBUTION OF SAVING AS INCENTIVE	41
TABLE VI PROPORTIONAL WAGE TABLE, INCENTIVE PLAN	42

	PAGE
Figure 1 - Layout of Offices	19
Figure 2 - Number of Prospective Clients with More than 30 Employees in Georgia Cities	21
Figure 3 - Proposed Illustration Order Form	25
Figure 4 - Reverse Side of Proposed Illustration Order Form	26
Figure 5 - Organization Chart	29

FOREWORD

Almost every machine, electrical instrument or electronic device manufactured for general use, should be accompanied by an instruction book. This fact has been demonstrated to the satisfaction of most large manufacturers in the United States and to many of the smaller ones. There remains, however, a large number of manufacturers who distribute no literature at all with their often very complex equipment. This is particularly true in the southern states. The attitude that such manuals are unnecessary is unfortunately prevalent among southern manufacturers and, with similar beliefs, prevents their competing successfully with other sections of the country, especially with the industrial east.

During World War II and the period just preceding it, southern industry gained an enlightened impetus. Our workers received much government training in the armed forces and war plants, and southern management has become aware of the fact that old methods were not, and are not, good enough for the coming era of expansion. Eastern industrialists, perceiving this southern awakening, are adding to its force by establishing additional companies and branch factories here. Anyone who, through a service company, can make a contribution to the efficiency of southern industry, may do his small part in raising the south to the position which its resources, both in men and materials, merit. Such, in short, is the function which the proposed technical writing company is intended to perform.

ORGANIZATION AND MANAGEMENT OF A TECHNICAL WRITING COMPANY

INTRODUCTION

Pretty girls, unassisted, sell very little machinery. This is true in spite of the fact that many such beauties appear in shops all over the country on calendars and billboards with everything from farm tractors to metal working lathes. It is not that any exception is taken to beautiful girls, quite the contrary, but many users of machinery buy one company's product and admire another's calendars. True, such eye-catchers do draw attention to the name of a manufacturer, but, in reality, the name does not sell the product either. Fundamentally, it is the mechanical ability and soundness of the equipment which attracts customers and which, indeed, makes the name.

In days when sales were smaller and equipment simpler, information about this mechanical ability and soundness was comparatively easy to convey to the consumer. This is no longer the case. In this age of complex products sold for precision use, such as electronic units, measuring devices, and other equipment embodying our latter-day miracles, there is a need for some medium of direct contact between the mind of the buyer and the complexities of the product. This is as true after the buyer becomes a user as it is before he has bought. It is essential to the good performance of the equipment and the satisfaction of the consumer that he be educated to appreciate the fine points of the product, learn how to operate it, maintain it at peak efficiency, and repair it if

necessary. A machine kept in good running order is, in the long run, the best advertisement for the company which manufactures it.

The best known means of satisfying this need is the technical manual. It is apparent that the old media -- promotional literature, advertising pamphlets, catalogs, service bulletins, and sales manuals -- however useful, do not fulfill these requirements. The technical manual, however, with its precise and comprehensible explanations of complex inner workings and technical processes, with its photographs, cut-away and exploded views, charts and diagrams, engineering and plane drawings, and its tables and isometric renditions, is exactly what is required to give the product and its prospective owner a complete "meeting of minds."

Frequently all of the literature published by a manufacturer is written by the sales manager with the help of company engineers and repairmen, and is illustrated by an outside artist. This procedure is actually very costly since it consumes the time and effort of the sales manager, a high salaried employee, and is frequently a slow process since the sales manager has a great many other functions to perform. Bulletins and brochures prepared in this manner are usually satisfactory, but in some cases technical manuals lack the accuracy, organization, and thoroughness found in manuals written by persons especially trained in the art of their preparation.

Any aggressive sales campaign for a technical product can hardly dispense with a thorough, accurate, and attractive technical manual on the equipment to be sold.

It is plain that a salesman equipped with such a powerful means of acquainting the prospective purchaser with the capabilities and

theory of operation of his product, would have a decided advantage over one who was dependent on a picture of the outside of the machine and a verbal description of its operational processes.

It is believed to be sound psychology that a person who understands the theory behind one piece of equipment will prefer that equipment to others about which he knows little or nothing.

The chief function of a salesman so equipped, is to arouse enough curiosity on the part of the prospect to make him go through pertinent parts of the manual. The fact that a manual is attractively prepared will, of itself, be an inducement to its perusal.

Such a salesman has an added advantage in that he can leave literature with the customer to be studied at his leisure.

It is not erroneous to assume that a prospective purchaser will manifest enough interest to cause him to get the facts about the product he intends to buy. A piece of equipment large enough to require such a manual would represent a considerable investment, and it is only logical to believe that the investor will be anxious to acquire all available information on the product he is considering. Since, as has been pointed out above, the technical manual is the best means of effecting a complete and speedy link between the mind of the prospective buyer and the equipment itself, it can readily be seen that such a manual would be a powerful tool in the hands of a salesman.

Little has been said here concerning the sales manual since its use is already widespread and the advantages which it possesses are fairly obvious to most manufacturers. The sales manual, with its pictorial representation of the products of a manufacturer and a brief de-

scription of the advantages they possess, will conceivably find a more widespread use than the technical manual, since it can be useful in selling simple equipment as well as more complex items. It is also useful in attracting the attention of prospective buyers to a particular company's product, thus arousing a curiosity which can be satisfied by the technical manual.

CHAPTER I

GENERAL

INDUSTRIAL MANUALS -- A DESCRIPTION OF THE PRODUCT

Industrial instruction manuals may be classified in three general groups: installation, operation, and maintenance. One manual may, of course, contain all or any part of this information, but, in general, separate manuals are issued since they are usually intended for use by different members of an organization.

Installation manuals contain all information necessary to uncrate and set up machinery. In cases where equipment is shipped in several units, to be assembled at the destination, or when the machinery requires certain special mountings or foundations, this manual is especially important. Certain initial adjustments and tests, as distinguished from operating procedure, which are to be made by the technician or person making the installation, are also covered in the installation manual. Frequently the machine in question will be attached to, or used in conjunction with, other machinery already installed. In this case, adjustments and modifications in the companion machinery must also be covered by the installation manual.

It is intended, in any case, that when the procedures set forth in the installation manual have been complied with, the equipment will be completely ready for operation.

Operation manuals contain all information necessary to enable a person having a minimum of knowledge and experience, to operate the

machine at greatest efficiency. It is to be stressed that manuals must be written in the language of the operator. No matter how technically accurate a manual is written or how perfectly styled, if it cannot be understood by the person for whose use it is intended, it is completely useless.

Operational manuals should include a general functional description of the equipment and all necessary tests and adjustments to be made by the operator. Each step of operation must be described in detail and, in most cases, should be illustrated by photographs. Operating precautions must be stressed to the operator at all times to prevent injury to himself, the machine, and raw materials. Steps in operating the machine must be carefully outlined, including, in some cases, instructions for starting and stopping. Maintenance instructions must be given for the operator's use. Care must be taken to include only such maintenance instructions as the operator will be able to perform. More complicated maintenance instructions are left for the maintenance manual; included, however, may be all simple adjustments, corrections, lubrication, and inspections that the operator can be expected to perform well.

Maintenance manuals must include all information which might be required to repair the equipment under any circumstances, and also schedules of preventive maintenance which the operator cannot or should not perform. Systematic check routines and trouble shooting data and charts must be included to aid maintenance personnel in locating causes of trouble. The functioning of the equipment must be explained in detail with the aid of diagrams, photographs, and any other form of illustration. This will enable maintenance personnel to be completely familiar with

the machine's complexities. Not only must what and how be explained, but why as well. All adjustments, replacements, and probable repairs, as well as the use of special tools, must be described in detail.

A parts list is commonly furnished at the end of the maintenance manual. This list must include all the identification numbers associated with the part, identification of the assembly or sub-assembly in which it is used, and a full description of the part, including dimensions. Exploded views of the equipment showing the name and stock number of each part are frequently employed in this section. This listing may be made alphabetically by name of part, alphabetically under assembly, or by part number. It is preferable that at least two of these listing systems be included in the manual.

The following outline of the major topics covered in industrial instruction manuals may be found helpful in explaining the contents and uses of each type.

INSTALLATION MANUAL

- (1) Uncrating (List of equipment supplied and how it is crated.)
- (2) Assembly and mounting
- (3) Modification of other equipment
- (4) Initial adjustments
- (5) Placing of equipment

OPERATION MANUAL

- (1) Over-all functional description
- (2) Preliminary adjustments and operator's maintenance
- (3) Operating procedure
- (4) Corrective maintenance to be made by operator

MAINTENANCE MANUAL

- (1) Over-all functional description
- (2) Detailed technical explanation of each unit
- (3) Preventive maintenance
- (4) Corrective maintenance or repair
- (5) Drawings covering complete equipment
- (6) Parts list

Industrial sales manuals fall in a different category from the industrial instruction manuals just discussed, though the same men with the same equipment can produce either interchangeably.

Sales manuals include several different types of literature, among which the catalog, sales brochure, and specification sheet are the most common. These types frequently overlap, but a typical example of each will be described.

A catalog is a pictorial and textual listing of the products of a manufacturer. Perhaps the easiest way to describe this type of industrial sales manual is to compare it to the familiar Sears and Roebuck catalog, the only difference being that instead of clothing, bicycles, skates, and toys, the industrial catalog describes machinery and associated apparatus, electronic equipment, or other similar items. In a catalog there is usually a fairly full description of each machine and its performance, and many illustrations of the new or superior features embodied therein.

A sales brochure is almost identical to a catalog, except that it covers only one item instead of many. It usually consists of one sheet of heavy paper folded once or twice, very colorfully laid out to glorify the manufacturer's product.

A specification sheet is merely a sales brochure which consists almost entirely of tables showing the specifications of the equipment.

Industrial sales manuals vary so extensively in style and content from company to company, that it is difficult to bring them into hard and fast categories. It is hoped, however, that the above descriptions will identify this particular type of literature in the mind of the reader.

WHO WRITES INDUSTRIAL MANUALS

At the present time the common practice in writing technical manuals on highly complex engineering is to leave the job to high-priced engineers, usually the men who designed and developed the particular equipment. Simpler manuals are often written by sales executives, utilizing the advice of the company's engineers. Any illustrations are made by the advertising department, outside artists, or by draftsmen employed primarily for other purposes. A manual produced by these methods is usually unsatisfactory for the following reasons:

- (1) When written by engineers, manuals generally will be written for engineers, hence will often be incomprehensible to the personnel actually using them.
- (2) An engineer usually regards the writing of an instruction manual as foreign to his profession and, as a consequence, will not have a great deal of enthusiasm for his work.
- (3) An engineer will be so familiar with the theory and operation of the equipment that he will frequently overlook important instructions that are obvious to him, inserting theoretical discussions beyond the comprehension of and useless to the using personnel.
- (4) Very few engineers have any conception of how a book of this kind should be written.

- (5) Illustrations are usually too few, colorless, and generally inadequate because they are done by men who do not appreciate the value of the work that they are doing, and because the author of the manual does not know what to ask for.
- (6) Manuals produced in this manner are usually very costly because they are written by men who could best be employed doing something else.
- (7) Literature written by sales personnel is frequently marked by great emphasis on a pretty brochure and little attention to engineering data. Operation and maintenance information is usually completely inadequate.

On the other hand, a company organized especially to do such work can do a better, less expensive job of writing an industrial manual. None of the disadvantages encountered above will exist in such a company, while the advantages are numerous:

- (1) The chief factor in favor of the writing company is that it possesses the facilities and ability necessary to write a good manual.
- (2) By letting the actual writers of the book contact the manufacturer's engineers for technical information in either written or verbal form, the necessity for employing engineers of long experience and high salary to analyze the equipment is obviated.

- (3) The art department of a writing company will be trained in producing the proper type of illustrations peculiar to industrial manuals and parts catalogs.

CHAPTER II

ORGANIZING THE TECHNICAL WRITING COMPANY

TYPE OF ENTERPRISE

The type of company proposed here seems to lend itself ideally to the individual proprietorship. In the first place, the initial capital investment may be as low as one pleases, in fact, a single individual could go into the business with only a pencil and paper. As returns from this initial investment come in, more equipment can be acquired and more employees can be hired. Even when the company has reached its maximum size, capital investment will be comparatively small, consisting mainly of artists equipment, office furniture, and typewriters.

In the second place, the working capital would be quite small, consisting almost entirely of a fund to pay the employees' salaries while working on a job. Because of the overlap in jobs, even this requirement would be decreased, since the time between the completion of jobs would be decreased.

BALANCE SHEETS AND COST OF EQUIPMENT

EXHIBIT A
M. L. BOYD
BALANCE SHEET
January 1, 1947

ASSETS		LIABILITIES AND PROPRIETORSHIP	
Current Assets			
Cash	\$ 7,000	M. L. Boyd, Prop.	\$17,000
Fixed Assets			
Furniture and Fixtures	3,000		
Office Equipment	3,800		
Artist's Equipment	2,600		
Deferred Charges			
Office Supplies	200		
Artist's Supplies	500		
TOTAL	<u>\$17,000</u>		<u>\$17,000</u>

EXHIBIT B
M. L. BOYD
Profit and Loss Statement
Jan. 1, 1947 to Dec. 31, 1947

Sales		\$40,000
Cost of goods sold (Exhibit C)		<u>17,100</u>
Gross Profit		22,900
Expenses		
Rent	\$10,000	
Light	80	
Office Salaries	<u>3,130</u>	
Total Expenses	13,210	
Net Profit on Sales		<u><u>\$ 9,690</u></u>

EXHIBIT C
M. L. BOYD
Statement of Cost of Books Written and Sold
Jan. 1, 1947 to Dec. 31, 1947

Materials

Purchases	\$400	
Total	400	
Less Stores Inventory		
Jan. 31	200	
Materials Used		200
Direct Labor		<u>16,900</u>
Cost of Goods Sold (Exhibit B)		\$17,100

TABLE I
COST OF EQUIPMENT

19	Typewriters	@ \$200	\$3,800
25	Drawing Sets	@ 20	500
4	Air Brushes	@ 15	60
20	Wrico Sets	@ 50	1,000
20	Leroy Sets	@ 50	1,000
2	Ozlid Machines	@ 250	<u>500</u>
	TOTAL		\$6,860

LAYOUT OF OFFICES

The layout of offices shown in Figure 1 will give some idea of the kind of office that a technical writing company might need.

The Receptionist, also the Switchboard Operator, sits in a position which will enable her to see and be seen by anyone entering or leaving the offices. The Reception Room itself is comfortably furnished for those who must wait to see a member of the firm.

The President's office is immediately adjacent to the Reception Room in order that he may be easily accessible to visitors. A door on the opposite side of the President's office leads to the offices of the Vice-President and the Chief Technical Writer.

The upper half of the walls of the Writing Team rooms is glass, chiefly for better lighting, and the walls are all movable. In this way more rooms can be made by adding partitions and the size of the rooms can be adjusted to the size of the job and the space needed.

Good lighting is essential in all rooms (except the Dark Room) and especially in the three rooms occupied by the Art Department. Daylight is preferable but if large windows are not available, good electric lighting must be supplied.

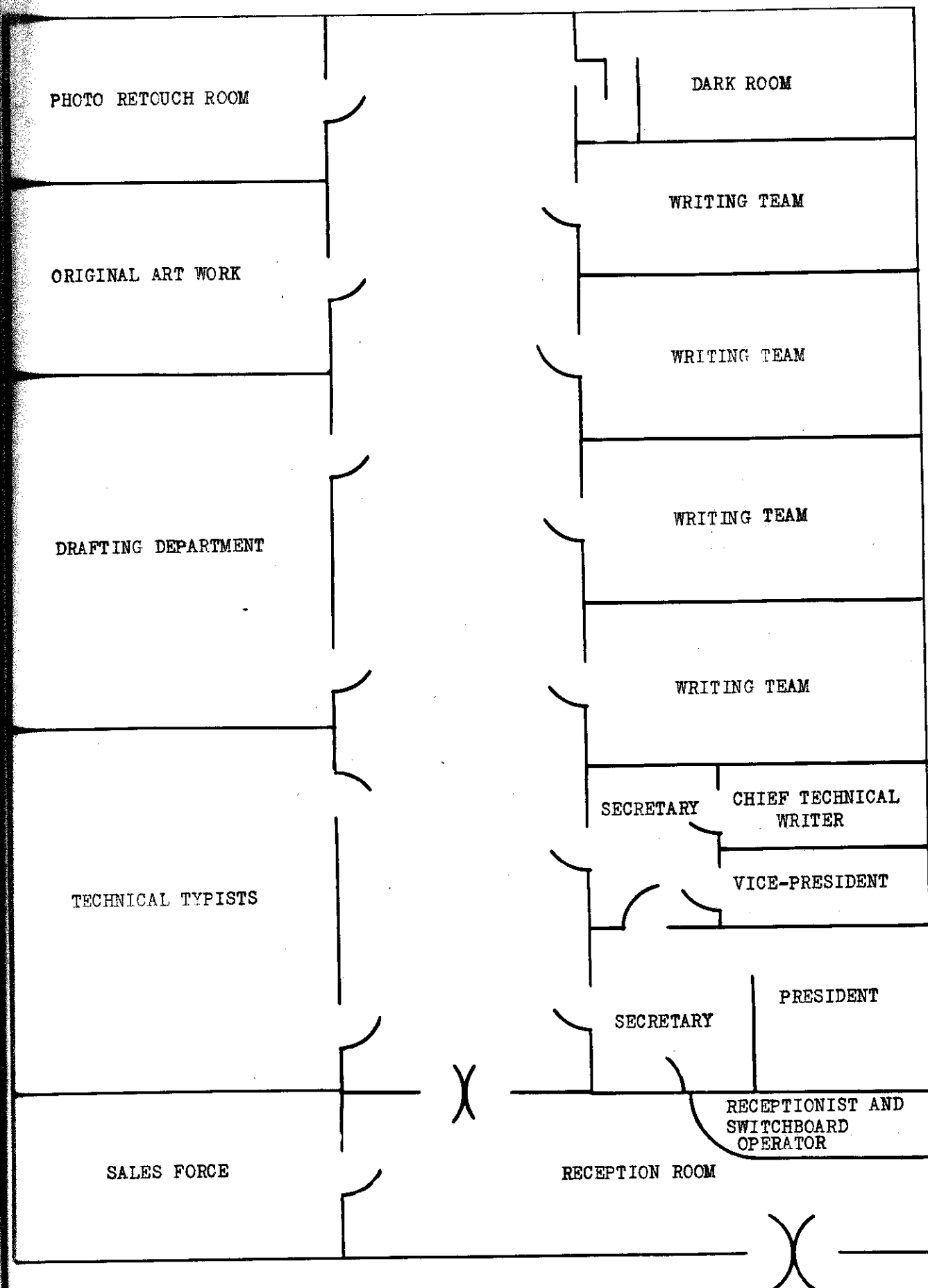


Figure 1 - Layout of Offices

OFFICE LOCATION

Obviously, if this writing company is to be located in the state of Georgia, it should be located in Atlanta. Being a service company, and to a large extent dependent on other industries, the company must be located in the most dense industrial section available. This section is Atlanta and vicinity, as can plainly be seen from Figure 2. Represented in Atlanta also are branch plants and offices for large out-of-state companies, through which a great deal of business is expected.

Another advantage possessed by the Atlanta area is that, according to the United States Employment Service,¹ it contains the greatest number of available skilled workers, of the type desired, in the state.

¹Interview with Mr. John McCormick, June 10, 1946.

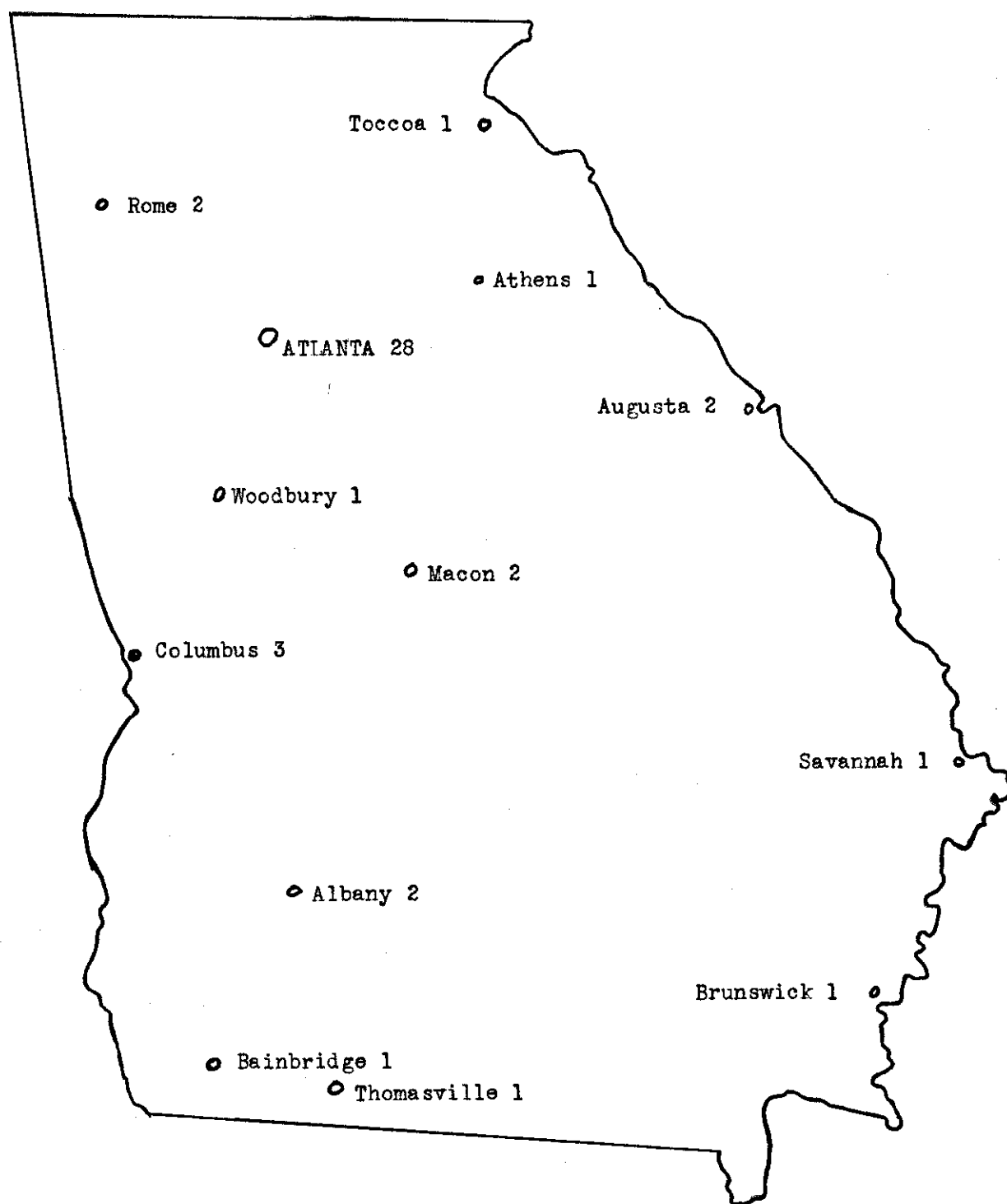


Figure 2 - Number of Prospective Clients with More than 30 Employees in Georgia Cities

CHAPTER III

DESCRIPTION OF WRITING PROCESS

The evolution of an industrial instruction manual may be broken down into six steps or phases:

- (1) Sales activities;
- (2) Submission of bid;
- (3) Preparatory or familiarization phase;
- (4) Writing and illustrating;
- (5) Corrections; and
- (6) Manufacturer's acceptance of book.

A book may be sold in many ways. Salesmen may convince a manufacturer that his company would benefit by a technical manual, the writer working on a company's job may discover the need for additional manuals within that company, or a company may order a manual without any direct sales activity.

When an order for a manual is received, steps are taken to thoroughly acquaint the proper members of the writing company with the job to be done (usually the chief technical writer and one head writer). Only until they are quite familiar with the job will they be competent to submit a bid to the manufacturer. Snap bidding without a complete investigation as to what the job will comprise is extremely dangerous. Frequently a job which appears quite simple and short will involve a great deal of associated equipment, and consequently, more work than is anticipated in the first impression. In general, types of jobs are as follows:

- (1) Revision of a manual already in existence;
- (2) Writing a manual on an entirely new piece of equipment.

Frequently, this type of job will involve a great deal of existing material in the form of bulletins, specifications, photographs, and drawings. The amount of this material, the availability of technical advice, and the complexity of the equipment itself are governing factors in submitting a bid.

If the bid is accepted by the manufacturer and a contract is executed, the familiarization phase begins. During this period, which may in some cases continue for a month or more, the head writer selected (who, it will be remembered, is already somewhat familiar with the job from his part in the submission of the bid), and the writing team under him, gather from the manufacturer and study thoroughly all available material, printed or otherwise, concerning the job to be done. No writing should be done until the whole job can be visualized.

During this phase of the work it is advisable for the head writer to draw up a detailed outline of the book and discuss it with the manufacturer. Such conferences usually lead to additional material and promote a meeting of the minds so that the end result will be a book satisfactory to all concerned. Work which is started without an outline must often be discarded or revised when the manufacturer finally sees it and discovers that it is not what he desires.

If there is a large quantity of art work to be done on the job, it is advisable to have an artist become familiar with the equipment along with the writers.

When all available information has been procured and assimilated by everyone concerned, actual writing and illustrating may begin. The head writer should assign definite sections of his outline to certain members of his writing team. This is the section with which the writer is expected to be entirely familiar, in addition to having a general knowledge of the entire subject.

The greatest single trouble encountered in the writing process is a tendency on the part of the writers to wait until the end of their job to send drawing and photographic requests to the art department. This, of course, will overburden that department greatly and frequently will prevent getting the manual out by the prescribed deadline. Writers must be encouraged to send on preliminary orders for art work as soon as possible. Usually, there is a number of drawings which are supplied by the manufacturer as correct and need only tracing. Over-all views of the equipment, for instance, can usually be started immediately.

When the writer is ready to order an illustration, he fills out the form shown in Figures 3 and 4 in triplicate and delivers it, with any pertinent sketches or other material, to the liaison artist who then forwards it to the art department. The liaison artists frequently assist the writers in preparation of the forms.

As soon as any section of the book is completed in the rough draft, checked and brought to semifinal form, it may be submitted unofficially to the manufacturer for suggestions and corrections. There is usually one engineer with whom the head writer has been working who will be willing to read this manuscript and make corrections on points of technical accuracy. This procedure is good insurance against having the manual rejected in final form.

Job No. _____ Illustration Order
 Client _____ Form
 Title _____ Date _____

Number reference sheets attached _____

TYPE OF WORK TO BE DONE

- ☐ Drawing from attached sketch.
- ☐ Tracing of attached drawing.
- ☐ Drawing from attached photo.
- ☐ Photograph object.
- ☐ Retouch attached photo as indicated.
- ☐ Photograph attached drawing.
- ☐ Cut out and mount attached photo.
- ☐ Make indicated corrections.
- ☐ See liaison artist.

TYPE OF ILLUSTRATION DESIRED

- ☐ Simple line drawing.
- ☐ Pen and ink rendering.
- ☐ Air brush rendering.
- ☐ Glossy print.
- ☐ Matte print.

TYPE OF MATERIAL

- ☐ Paper.
- ☐ Linen.
- ☐ Illustration board.

LETTERING SIZES

CAPS: Wrico Size No. _____ Pen No. _____
 Le Roy
 lower case: Wrico Size No. _____ Pen No. _____
 Le Roy

COLOR

Number of colors in drawing ____.
 Colors in drawing _____, _____, _____, _____.
 Color indication on final drawing:

- ☐ On drawing.
- ☐ Acetate overlay.
- ☐ Tissue overlay.
- ☐ Separate drawings.

REMARKS:

INSTRUCTIONS

When this drawing is completely penciled in, send an ozlid print to writer, through liaison artist, before inking in. File pencil copy. When ozlid print is returned to art department, make corrections as indicated, ink drawing and return original ozlid print, plus a print of the inked drawing to writer through the liaison artist. File inked drawing until called for. The white copy of this form goes to art department, pink copy to liaison artist, blue copy for writer's file.

REQUESTED BY _____ APPROVED BY _____
 Liaison Artist

Figure 3 - Proposed Illustration Order Form

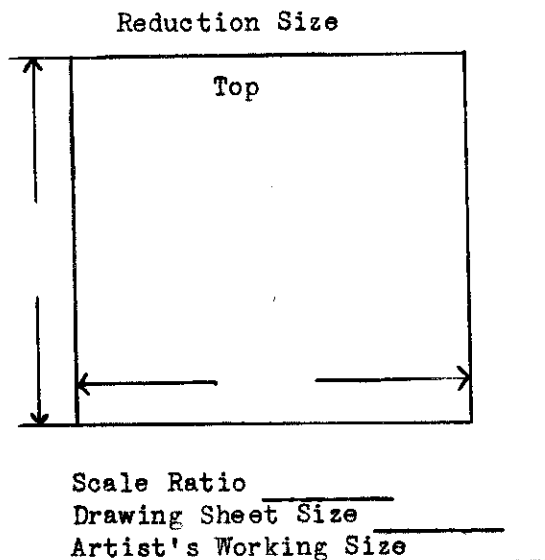


Figure 4 - Reverse Side of Proposed
Illustration Order Form

Almost inevitably the writers will encounter technical difficulties in dealing with complicated equipment. The questions of the writing team should be accumulated and one man sent to get all the answers from time to time, when it is deemed necessary to the progress of the book. Urgent questions may be dealt with by mail, telegraph, or telephone. Any communications regarding technical information must be written by the head writer and should be signed by the chief writer.

When the manuscript is in final form, a certain number of copies of text and illustrations, as specified by the contract, are prepared and submitted to the manufacturer for final approval. Frequently small changes may be indicated. These changes must be made to conform exactly to the ideas of the manufacturer.

The final layout is prepared by the art department's layout men and submitted. Spacing and illustration locations must be accurately indicated to guide the printer.

CHAPTER IV

MANAGEMENT AND LABOR

ORGANIZATION

The organization of the proposed company, as seen in Figure 5, is of the line and staff type. The President issues orders through, and is advised by, four key members of his staff, the Chief Technical Writer, Chief of the Art Department, the Sales Manager, and the head of the Bookkeeping Department.

Two of the staff sections, the Art Department and the Technical Writing Department, are further tied together by Liaison Artists (see Job Specifications).

The chiefs of the Art Department and Technical Writers are themselves heads of line and staff organizations, for each of the sub-departments under them are composed of a group of employees with a director at their head.

Only three writing teams are shown on the chart, but there may be any number at a given time, depending on the number of jobs there are to be done.

It is estimated that the following types and number of employees will be needed in the proposed company. See Job Specifications where applicable.

TABLE II

LABOR REQUIREMENTS

1	Sales Manager
3	Salesmen
1	Chief Technical Writer
5	Head Technical Writers
25	Technical Writers
1	Art Department Chief
20	Draftsmen
4	Airbrush Men
3	Commercial Artists
2	Checkers
1	Ozlid Machine Operator
3	Liaison Artists
1	Chief Technical Typist
15	Technical Typists
7	Bookkeepers
4	Stenographers
<u>2</u>	Editors
98	TOTAL EMPLOYEES

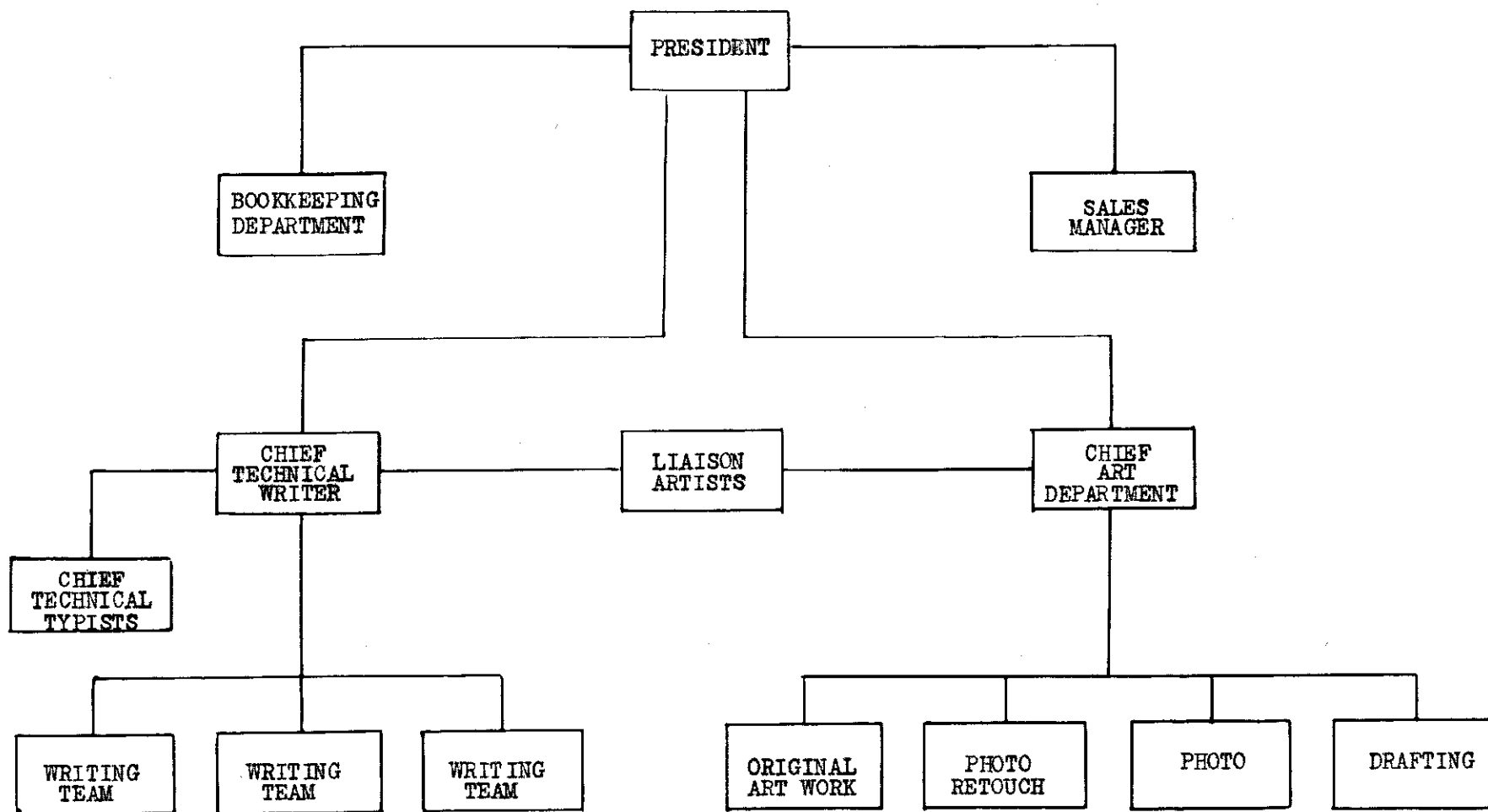


Figure 5 - Organization Chart

WAGES

The following is a listing of prevailing wages as occurring in Atlanta in June 1946. This data, which covers some of the types of skilled workers that will be required by the proposed company, were obtained from the United States Employment Service office in Atlanta.²

TABLE III
PREVAILING WAGE RATES

<u>Type of Worker</u>	<u>Wages Paid</u>		<u>Supply</u>
	<u>Minimum</u>	<u>Maximum</u>	
Typists	.70*	.80	None
Stenographers	.85	1.20	None
Draftsmen	1.25		Limited**
Commercial Artists	1.00	1.25	Limited
Bookkeepers		1.55	Limited

*Rates are in dollars per hour.

**Where "Limited" appears, it is believed that a sufficient quantity of workers can be recruited.

No information was obtainable on the availability and supply of technical writers and various other types of workers, since the United States Employment Service has no record of them.

It is intended that the following wage scale be set up in the proposed technical writing company.³

²Interview with Mr. John McCormick in the Atlanta office of the United States Employment Service on June 10, 1946.

³The author was guided in his choice of figures by his own experience and by information gained in an interview with Mr. John McCormick in the Atlanta office of the United States Employment Service, June 10, 1946.

TABLE IV
SALARY AND WAGE RATES

<u>Type of Personnel</u>	<u>Salaries and Hourly Rates</u>
Technical Writer	\$1.00 - 2.25
Typist	0.80
Draftsman	1.25
Commercial Artist	1.25
Editor	1.60
Liaison Artist	1.30
Head Writer	1.50
Chief Technical Writer	2.00
Chief Art Department	2.00
Bookkeeper	1.55
Checker	1.25
Stenographer	1.10
Air Brush Artist	1.30
Salesman	150.00
Sales Manager	250.00

JOB SPECIFICATIONS

The following job specifications cover all personnel except stenographers, secretaries, and employees in the art department. Since the art department is a group of highly skilled specialists, it was thought better to let the chief of that department set up his own employee specifications and hold him solely responsible for all art work.

These specifications will assist in getting the right man for the job and in understanding the inner functioning of a technical writing company. Consult the organization chart, Figure 5, frequently while reading the following section.

Job Specifications for Technical Writer

Functions:

- (1) Collects technical information from manufacturer.
- (2) Informs himself of specifications and purpose of manual (who is to use it).
- (3) Compiles manual. This includes writing the text and ordering illustrations of the proper size and type from the Art Department.

Qualifications:

- (1) Must be able to write simple, concise, and intelligent English.
- (2) Must have a mechanical turn of mind.
- (3) Should be conversant with the technological terms employed in the various industries. Must be versatile.
- (4) Should be able to read specifications and blue-prints.
- (5) Should be able to make a favorable impression on the engineers of other companies from whom he obtains information.
- (6) Should have a working knowledge of drafting, artwork and printing processes.
- (7) Must be able to write an intelligible hand.
- (8) A knowledge of proofreading is helpful.

Job Specification for Head Technical Writer

Functions:

- (1) In charge of producing a manual; coordinates the work of a team (2 to 6 men) of writers.
- (2) Is in charge of obtaining material from manufacturer's engineers.
- (3) Sees that book has uniformity of style. This frequently includes rewriting and correcting parts of the work done by the rest of the team.
- (4) Keeps chief technical writer informed on the progress of the book.

Qualifications:

- (1) Must be able to perform all the duties of a technical writer.
- (2) Must be able to coordinate the efforts of those under him.

Job Specification for Chief Technical Writer

Functions:

- (1) Coordinates work of technical writing department. Assigns writers and head writers to various jobs and teams according to their special knowledge and temperament.
- (2) Schedules all work of Technical Writing Department.
- (3) Makes certain that the art department is producing what the writers want and that writers know how to ask for what they want.
- (4) Makes a survey of a prospective job when requested by the proprietor and submits a bid.
- (5) Transmits all initial information on a new job to head writer in charge of writing the book.

Qualifications:

- (1) Must be able to perform all duties of those subordinate to him.
- (2) Must be a leader and organizer.
- (3) Must have sufficient knowledge of the business as a whole to submit a good bid for a new job.
- (4) Must be an excellent contact man.

Job Specification for Technical TypistFunctions:

- (1) Takes copy from writers and prepares the proper manuscript.
- (2) Types reports, etc., as directed.

Qualifications:

- (1) Must be a good typist.
- (2) Should know enough technical terminology to recognize terms.
- (3) Must be able to follow directions precisely as to margins, spacing, etc.
- (4) Must be familiar with proofreading symbols.

Job Specification for Chief Technical TypistFunctions:

- (1) Distributes work to technical typists. Gives work to typists most familiar with the particular work.
- (2) Allots typists to a writing team for continuous use when so directed by chief technical writer.
- (3) Types when other duties permit.

Qualifications:

- (1) Must be excellent typist.
- (2) Must be able to direct work of other typists.

Job Specification for Chief of Art Department

Functions:

- (1) Organizes the flow of work through his department so that there is no delay in preparing material requested by writing department.
- (2) Assumes the responsibility for the quality of work turned out by his department.
- (3) Sets up job specifications for members of his department.
- (4) Hires and fires employees for his department.
- (5) Works through sales department with other firms to secure contracts for publications requiring only art work.

Qualifications:

- (1) Must be well trained in illustrating techniques, including photography, drafting, drawing, photo retouch, and book layout.
- (2) Must be a good organizer and personnel manager.
- (3) Must be familiar with the technical terms, drawings, and conventional symbols employed in technical literature.

Job Specification for Liaison ArtistFunctions:

- (1) Takes all orders for art work from technical writers and conveys them to art department.
- (2) Assists writers in ordering illustrations so that they can get what they want, and is available to give any information needed by writer concerning art work.
- (3) Interprets book specifications as they apply to art work, type size, style, etc.
- (4) Supervises layout men and, when not otherwise occupied, does layout work himself.

Qualifications:

- (1) Must be completely familiar with the organization of the company, especially that of the art department.
- (2) Must know the job of everyone in the art department.
- (3) Must know writer's job thoroughly and understand their problems.
- (4) Must be a good "liaison" man.

Job Specification for Editor

Functions:

- (1) Proofreads the semifinal text turned out by the writing teams. His capacity is advisory, hence the desires of the head writer are final on any point. The editor must not attempt to proofread for technical accuracy; he looks for errors in spelling, punctuation, and composition only.
- (2) Where there is a definite specification for the book, the editor checks to determine whether or not the manuscript follows the specification. He may also check manuscript against the head writer's outline to make certain that all parts are covered.

Qualifications:

- (1) Must be an experienced editor, conversant with current printing practices.
- (2) A knowledge of technical terms and style is desirable.

Job Specification for Salesman

Functions:

- (1) Keeps abreast of industrial situation and discovers the need for manuals.
- (2) Convinces manufacturers of the need for manuals and that his company is the best for the job.
- (3) When job is obtained, salesman consults proprietor and chief writer.

Qualifications:

- (1) Must possess those qualities generally attributed to salesmen.
- (2) Must be conversant with industrial processes and methods.

Job Specification for BookkeeperFunctions:

- (1) Keeps the books of the company.
- (2) Makes out employees' pay checks from time cards.
- (3) Bills clients for services rendered.
- (4) Keeps records of and assigns client job numbers.

Qualifications:

- (1) Selected by head of Bookkeeping Department.

First, the total estimated amount to be used as bonuses (obtained from Table V above) is divided by the number of man hours on the job. This will give the unit bonus. This unit bonus is in turn multiplied by the proportional figure found in the chart below, and this result multiplied by the number of hours the particular employee has worked on the job. This will give the job bonus for the employee.

TABLE VI
PROPORTIONAL WAGE TABLE, INCENTIVE PLAN

<u>Pay Scale (Dollars per Hour)</u>	<u>Proportional Figure</u>
\$1.00 - 1.20	0.7
1.25 - 1.35	0.8
1.35 - 1.45	0.9
1.45 - 1.55	1.0
1.55 - 1.65	1.1
1.65 - 1.75	1.2
1.75 - 1.85	1.3
1.85 - 1.95	1.3
1.95 - 2.05	1.4
2.05 - 2.15	1.4
2.15 - 2.25	1.5
2.25 and higher	1.6

To illustrate this system, let us assume that a bid was submitted which included estimated labor costs amounting to \$3,500. The accounting department ascertains that actually only \$2,900 was paid in wages to men working on this particular job. This means that the actual cost of labor was only 83% of the estimated amount. Taking the next lower percentage figure in the foregoing table, we find that when the actual cost is 80% of the estimated cost, 50% of the saving is to be used as bonuses. In this case the saving was 600 dollars, hence 300 dollars,

INCENTIVE PLAN⁴

When each bid is submitted on a writing job, a record will be made of the estimated labor costs used in determining the bid. When the job has been completed and accepted, the accounting department will compile the total actual labor costs. If this figure is lower than the estimated labor costs, the following bonus system will be used.

TABLE V
DISTRIBUTION OF SAVING AS INCENTIVE

<u>Percentage actual cost is of estimated cost:</u>	<u>Percentage of saving to be distributed to employees:</u>
95%	35%
90%	40%
85%	45%
80%	50%
75%	55%
70%	60%
65%	65%
60%	70%
55%	75%

The actual total saving on labor cost will be multiplied by the appropriate figure as indicated above, the result being approximately that amount of money that will be distributed to the employees who worked on the particular job. Since a high salaried worker can, by efficient work, save more money, proportionately, than can a lower salaried man, it is only logical that his bonus should be somewhat larger. The scale below will be used to determine what this ratio will be.

⁴This plan is original with the author.

or 50% of 600 dollars will be distributed as bonuses. Assuming that 2000 man hours were spent on the job, the unit bonus is $300 \div 2000$, or \$0.15. Let us now determine the bonus for a writer being paid \$1.50 an hour, whose time cards show a total of 300 hours on the job.

From the chart above, the proportional figure for \$1.50 an hour is 1.0. The total bonus to be paid this employee is then this proportional figure multiplied by the unit bonus and by the number of hours worked on the job. In this case the figures would be

$$1.0 \times 300 \times 0.15 = \$45.00$$

An extra bonus may be declared by the proprietor at any time, if it is felt that the total amount to be distributed, as determined by the percentage scale above, is insufficient. This declared bonus will allow for situations where the initial labor estimate is obviously in error, or when it is desired to commend the high quality of work done on a job. No opportunity should be lost to use the stimulus which is evoked when employees know that their employers recognize the merit of their efforts.

CHAPTER V

MARKETING

SALES ORGANIZATION

The most logical sales plan for this type of company seems to be the assignment of the four available salesmen as follows:

Sales Manager: General salesman and supervisor

Salesman #1: Salesman to electric and electronic industries

Salesman #2: Salesman to textile and associated industries

Salesman #3: General salesman, chiefly concerned with industrial sales manuals

In this manner each salesman can be placed in a position to use his special knowledge of a certain type of industry, and his contacts in that industry. The very nature of the product prohibits an organization by area or territory.

The sales manager will receive a salary of \$250 monthly and a commission of 5% of the net profit on the job. The three other salesmen will be paid in the same way except that they will receive a salary of approximately \$150.00, due to the absence of supervisory work on their part. Taking the sales commission as a percentage of the net profit will help insure a carefully considered bid. Salesmen will not want the bid too high, for lost business would be lost commission; they would not want it too low, for a low margin of profit would reduce their commission.

PRICING POLICY

Pricing policy will necessarily be based on the following factors:

- (1) Length of time required to do the job.
- (2) Number of employees required to do the job.
- (3) Cost of labor used.
- (4) Overhead expenses.
- (5) Profit desired.
- (6) Ability of client to pay.

Estimating the length of time that will be required to write a manual of a given kind on a given subject or piece of equipment is a most difficult task. For this reason it was recommended in a previous chapter that a thorough study be made of the subject of the proposed book before a definite bid is submitted. It is hard to tell how complex a piece of equipment will be, or how many associated fields it will involve until a survey is made of the material available and of the equipment itself. After this study is made, however, and the amount and quality of existing literature is taken into account, it is possible to estimate fairly accurately how much time would be required to write the kind of manual that is being bid on.

It is almost always advisable to use as many writers on a job as is consistent with high quality, homogeneous style, and efficiency. From general experience, a head writer can handle only approximately six writers and keep a sufficient degree of control over the progress of the work. On the other hand, it is extremely inefficient to put even

one extra man on a job. The extra man will lighten the load on the whole writing team and, as a consequence, it is doubtful if much progress will be made. It is always more desirable to have too much work than too little; all concerned will exert more effort if this is the case. A balance must be struck whereby all writers can be kept busy all of the time and the job can be accomplished in the shortest possible period. The chief factors determining how many writers can efficiently be used on one book at once are as follows:

- (1) Length of book;
- (2) Diversity of material covered; and
- (3) Number of divisions into chapters, sections, etc.

These factors must be kept in mind when determining the number of writers to be used and consequently the over-all length of time necessary to write or revise any book.

Labor cost is a function of time and number of employees used, as well as of the type of employees used. Specialists in certain fields may be required, together with other high salaried writers, or, if the job is a comparatively simple revision, a lower salaried group of writers may be used and a great deal of the work will be done by typists. If a large amount of original art work is required, labor costs will be higher than if art work is supplied or if it is simply in need of revision.

Naturally, the company will desire to make as great a profit as practicable; however, it will be expedient to keep profits down until the worth of a service such as the company will offer has been proven to southern industry. It is imperative that the company establish a reputation for thorough, accurate and dependable work at a reasonable

cost. Since one of the chief selling points of a technical manual is that its use or distribution will represent a substantial saving for the using company, it would be fruitless to charge an exorbitant price for the manual.

In order to help develop a promising company into a good customer or a potential customer, manuals may be written for a minimum profit as a long range investment.

The average price per page for writing a moderately illustrated technical manual in eastern companies is approximately \$85.00. It will no doubt be possible and necessary to cut this price initially in order to build up a clientele in the south.

ANALYSIS OF THE MARKET FOR INDUSTRIAL MANUALS IN GEORGIA

The investigation herein described undertakes to discover the answers to the following questions:

- (1) Is there a market or potential market in Georgia for a company which prepares industrial manuals?
- (2) Where, if at all, in Georgia is this market concentrated?
- (3) How large is the market in Georgia?

It is hoped that these answers will form the basis for an enlightened opinion as to whether or not it would be practicable for a company engaged in the preparation of industrial manuals to begin operations in Georgia. The determining factors in the formation of such an opinion are whether there are sufficient industries of the proper size and type here to support such an undertaking.

For several important reasons this survey has been limited entirely to the state of Georgia, although in actual practice such neighboring industrial centers as Birmingham and Mobile, Alabama; Jacksonville, Florida; and Chattanooga and Knoxville, Tennessee, would undoubtedly be considered.

The primary obstacle to including these areas in this investigation is the immense difficulty in obtaining the requisite information from them. Connections at The Georgia School of Technology and others in Atlanta have made the accumulation of information on Georgia relatively simple, but distance, and the lack of any knowledge concerning the industrial situation in areas foreign to this state, made it impossible to bring them under consideration.

There are, in the United States, only a very few companies existing for the purpose of writing industrial manuals for manufacturers, and none of these is in the southeast. To the author's certain knowledge there are such companies in Philadelphia, Cleveland, Pittsburg, and New York, but the industrial environment of these companies places them in a position completely foreign to a similar organization in the south. A consideration of their marketing problems would be of no specific use in a determination of the outlook for such a company in Georgia, though the bare fact that they do exist offers some encouragement to a belief that there is a need for one here in the south.

The information concerning the various manufacturers contained in this marketing survey was obtained in two ways. Most of the concerns mentioned were visited in person and in all such cases either the president or the sales manager of the concern was interviewed. The following facts were elicited:

- (1) Does the concern issue manuals of any sort?
- (2) If so, who prepares them and how are they prepared?
- (3) Copies of the manuals were obtained.
- (4) Do you think that there is any field for a manual writing service in your field in the south?

Essentially the same information was requested from representative industrial producers in the state of Georgia, but outside the city of Atlanta, by letters prepared and sent to over thirty companies.

To be selected for this survey a producer must have met several basic qualifications. The determination of these qualities might possibly have been considered a part of the investigation, but it was

thought that they were sufficiently obvious to be immediately apparent to anyone giving the problem the slightest consideration.

In the first place, the concern must produce the type of product which, *prima facie*, might conceivably require a manual of some sort. Such a product must be of sufficient complexity to require explanation to its intended users, purchasers, or salesmen. Producers of such commodities as shoes, clothing, or food stuffs, for instance, do not fall into this category. On the other hand, the machinery used in the fabrication or processing of these commodities would perhaps provide the subject matter for an industrial manual.

Secondly, the producer must be of sufficient size or financial stature to be in a position to afford the services of a manual writing company.

In selecting the specific businesses inquired into in this survey, these two considerations were borne in mind and no manufacturer was chosen which did not fill the requirements which they imposed.

In attempting to evaluate the need for industrial manuals in Georgia it will be helpful to subdivide the market into groups of similar industries. In this way, representative examples from each group can be studied and some conclusion can be reached as to the potentialities in that industry as a whole.

First, let us look at the situation in the textile industry. A large number of workers are employed in textile manufacture in Georgia, and there are many such factories located here using very complex machinery. In addition, regional offices for the three largest manufacturers of textile machinery and several factories producing cotton

ginning equipment are located in Atlanta.

Textile equipment changes very little with the passage of time; basically the machinery has remained the same for the past fifty years. From time to time various accessories and methods have come into favor and relapsed into obsolescence, sometimes to be replaced by an older device or method. As a consequence, the average age of the existing literature on this equipment is about twenty years. In some cases, sales brochures of a more recent vintage have been prepared, but as a rule there is a general dearth of literature on textile machinery. There is, however, one progressive company in the field which puts out excellent and attractively prepared "care and maintenance" manuals on their equipment.

There are several reasons for this lack of technical literature on textile equipment. The first and most important of these is the way in which this machinery is installed and maintained. When a piece of equipment is sold, it is installed in the mill by factory experts and thereafter is maintained by frequent visits to the mill by factory trained maintenance men. In some cases, maintenance men at the mill are trained by company men to carry on maintenance and repair work.

The second reason for the general absence of literature on textile machinery has already been mentioned; that is, the equipment embodies age-old principles and has changed very little except in minor details. Manufacturers feel that men in the textile industry have grown up with their machinery and need no manual to explain it to them.

The manufacturers from whom this information was obtained are as follows:

WHITIN MACHINE WORKS
Atlanta

Mr. M. J. Bentley, Selling Agent, was interviewed August 8, 1946. The following facts were learned:

Whitin has only a few service bulletins, so old that their style gives them away. The company does put out a good parts catalog.

Equipment is installed and maintained by factory representatives.

H & B AMERICAN MACHINE COMPANY
Atlanta

Mr. King, Sales Representative, was interviewed August 8, 1946. H & B has one attractively prepared sales brochure showing pictures of the various machines produced by H & B, with short descriptions of each.

The company has numerous out-of-style technical bulletins, obviously intended more for sales than for maintenance manuals.

SACO-LOWELL MACHINERY SHOPS
Atlanta

The Sales Manager of the Southeastern District was interviewed August 8, 1946.

The company has two very superior illustrated manuals on care and maintenance. These manuals contain approximately 80 pages each and are very comprehensive. They are intended both as sales and maintenance manuals.

In addition to these three leaders in the textile machinery field, there are numerous factories in Georgia which manufacture accessories and replacement parts for the industry. None of these, to the writer's knowledge, issues manuals.

The situation in cotton ginning machinery manufacture is somewhat different from that described above. In spite of the fact that the gins are installed by factory men, it is more difficult for the factory to provide complete maintenance services due to a large number of small installations. The sales manager of one gin company said in an interview,⁵ "We install them, they run them until they quit and then they call us." He was of the opinion that no operators would read manuals even if they were issued, and held that the operators were often illiterate. This may well be the case, though one can foresee the era when it will no longer hold true.

Companies contacted are as follows:

CONTINENTAL GIN COMPANY
Atlanta

A letter was written to this company on March 27, 1946. The answer indicated that no manuals of any kind were issued.

An interview on August 10, 1946, was unproductive. The author was told that no literature is issued because machinery is installed and maintained by the company. It was learned from other sources, however, that this

⁵Interview with Mr. C. A. Pope of the Murray Company's Atlanta factory on August 16, 1946.

company is very progressive but somewhat secretive and does issue manuals. Main executive offices are in Birmingham, Alabama, so no verification was possible.

THE MURRAY COMPANY
Atlanta

Interview on August 16, 1946, with Mr. C. A. Pope, Southeastern Sales Manager.

This concern issues a separate, two sheet, sales brochure on each piece of equipment, but no installation or maintenance manuals. The company performs both of these services.

The Murray Company has, in the past, issued manuals on maintenance, but the objection was raised that when the equipment was modified, the manuals actually caused difficulties in the field because they did not fit the machine. This, of course, is due to failure to keep manuals up to date and is no fault of manuals in general.

CENTRIF-AIR MACHINE COMPANY, INC.
Atlanta

A letter of March 27, 1946, brought an illustrated two-page brochure on "Superior Long Staple Cotton and Rayon Cleaner." This bulletin was rather poorly prepared, showing two photographs of the equipment. It is obviously intended for sales use only.

An accompanying letter from Mr. J. B. Brenner, Vice-President and General Manager, states that the

company does not issue maintenance or installation manuals.

Another important group which forms a part of the market for industrial manuals is public transportation companies. These companies do not need manuals for distribution to their customers, but in many cases they do need repair and procedure manuals for use in their own maintenance shops.

When a bus, streetcar, or locomotive has run a certain number of miles or hours, which ever is the basis for maintenance procedures within the particular company, it is brought into the shops and given a thorough inspection or over-haul. This inspection or over-haul is a systematic procedure, performed by a large number of mechanics, each doing a particular job. The basis for coordinating workers of this kind is the procedure manual. Describing, in detail, what will be done, by whom, and when, the procedure manual makes a smooth working team of a group of workers; each worker adds to the efficiency of the group when he knows exactly what he is expected to do, and when he must do it.

The transportation companies in Georgia which might need a manual writing service are as follows:

GEORGIA POWER COMPANY
Atlanta

An interview on August 16, 1946, with Mr. Bowles, Superintendent of Equipment, Transportation Division, revealed:

At the present time, foremen's manuals exist in skeleton form.

Much reliance is placed upon manufacturer's manuals, when they are issued. No manuals exist for streetcars since they are comparatively simple and are so old that all concerned are quite familiar with them. Buses are manufactured by A.C.F. Brill of Philadelphia and complete maintenance manuals are supplied by the maker. Trackless trolleys are a composite of the products of many different companies. The bodies are made by one concern, the door mechanisms by another, the axles, motors, and electrical equipment by still others. Mr. Bowles spoke of the desirability of a single manual on the vehicles, made up from manuals on all its parts which are issued by the different manufacturing companies.

Public transportation systems in other large cities in Georgia must be faced with similar problems. Due to their similarity, no others have been contacted.

Railroad repair shops must find themselves in a similar situation, as regards maintenance of rolling stock, to city transportation companies. Railroad engines and cars must also be inspected and over-hauled at definite periods to give best and longest service. The author has been unable to ascertain whether or not manufacturers of railroad equipment issue manuals, since all the repair shops in Georgia are some distance from Atlanta and it was thought best not to write a letter requesting such complex and unusual information. It is believed that a personal visit would yield far greater results, since it is usually very difficult to get executives to comprehend exactly what information is desired.

The railroads maintaining shops in Georgia are as follows:

ATLANTIC COAST LINE RAILROAD SHOPS
Albany

These shops employ 209 men. Another shop is located in Thomasville which has 228 employees.

SOUTHERN RAILROAD COMPANY SHOPS
Columbus

CENTRAL OF GEORGIA RAILROAD SHOPS
in

Macon, with 2097 employees;
Albany, with 148 employees; and
Columbus, with 295 employees.

Any shop with as large a number of employees engaged in a systematic procedure of maintenance and repair as these companies have, must, in order to operate successfully, have some sort of procedure manuals. Even if these exist now, they are no doubt in need of revision from time to time as methods and equipment change. Further, it is possible that manufacturers of railroad rolling stock do not issue maintenance manuals with their equipment or that the same situation prevails in railroad shops as exists in the maintenance of Atlanta's trackless trolleys.

Manufacturers of refrigeration equipment form another part of the manual market in Georgia. The major products of these companies include refrigeration show cases, both walk-in and reach-in refrigerators, water coolers, and air conditioning units. Three types of manuals are in use in this field -- illustrated sales brochures, manuals on the care and maintenance of the equipment, and service manuals for use in training service men.

Manufacturers of refrigeration equipment contacted in Georgia are as follows:

AIR AND REFRIGERATION CORPORATION
Atlanta

A letter of March 27, 1946, brought an excellent technical and sales manual on capillary air conditioners and a bulletin on a particular model giving its advantages and specifications. Comments on general maintenance procedures are included in both of these pamphlets, but there are no specific and detailed instructions.

LARKIN COILS
Atlanta

An interview on August 6, 1946, with Mr. Sims, disclosed that several manuals are issued by this company. There is a general treatise on commercial refrigeration, several sales and specification manuals, and a large, illustrated catalog of Larkin products. Mr. Sims revealed that these manuals were gotten together by the sales manager with the assistance of an outside artist.

None of these manuals accompanies the equipment to the user. They are apparently intended for sales purposes only.

THE WARREN COMPANY
Atlanta

An interview was held with Mr. J. D. Harris, General Sales Manager, on August 8, 1946. This is a fairly large organization, having 350 employees and quite a large factory.

The Warren Company issues a mass of literature, including many sales manuals and brochures, a history of the company, a house organ, and, from time to time, promotional literature for sales drives and contests. There are several one-sheet pamphlets on "How to Operate a Warren Display Case." These latter manuals are too short and do not contain sufficiently detailed information.

Mr. Harris remarked that his company needed more complete "care and use" manuals for all its products.

There are several organizations in Georgia which, though they have no need for a manual as such, will have occasion to call on the services of a technical writing company. These are publishers of trade journals, who frequently want to include technical articles in their publications, but have inadequate facilities for writing them. Such trade journals frequently call on outside writers to prepare technical articles on new processes, methods, or equipment, which they have neither the time nor personnel to write.

W.R.C. SMITH COMPANY
Atlanta

The largest publisher of trade journals in Georgia is the W.R.C. Smith Company in Atlanta. This company issues the following magazines: Southern Automotive Journal, Electrical South, and Southern Power and Industry.

Several interviews with Mr. A. F. Roberts, Editor of the Southern Automotive Journal, indicate that his company would definitely be interested in a service which could prepare illustrated articles on any desired subject.

Manufacturers of sprinkler systems and allied equipment form another group of industries in Georgia which might find a use for sales and installation manuals. Among these companies are:

CRAWFORD AND SLATEN COMPANY
Atlanta

In an interview with the sales manager of this company on August 12, 1946, it was learned that at the present time no literature at all is issued on their equipment; not even sales pamphlets or brochures. The sales manager said, "You just don't sell sprinkler systems that way." His thought was that contractors were already familiar with sprinkler equipment and the methods employed in installing it. Sales activities are apparently at a minimum in this company, orders are filled as they come in, but no effort is made to sell or demonstrate the superiority of their equipment by means of manuals.

The same general situation prevails in the General Fire Extinguisher Company of Atlanta as in the Crawford and Slaten Company.

THE BERKLEY PUMP COMPANY
Atlanta

This company manufactures automatic water systems and does issue sales brochures, a catalog, and instruction cards on their products. These instruction cards, five and one-half by ten inches and printed on both sides, contain the information necessary to install a Berkley system, together with the bare essentials of a maintenance program.

The catalog includes some theory of operation for the system, specifications, and a glossary of terminology for the equipment.

To the writer's certain knowledge, there are two large manufacturers of prefabricated houses in Georgia. It seems plausible that more such companies have sprung up since December, 1945, the date of the last available information. The two companies mentioned are:

TOVELL CONSTRUCTION COMPANY
Greenville

GEORGIA CONSOLIDATED CONTRACTING COMPANY
Ellaville

Since identical information was received from both these companies, they will be treated together. No manuals, either sales or erection, are supplied with either of their products. It is certain that blueprints accompany the houses to aid in their erection, but no other literature of any kind is issued. Both of these companies are large, one has 300 employees, the other 400, and it would seem to their advantage and within their means to publish attractive sales brochures on their products, giving details of construction and material specifications where applicable. In addition, there is probably a field here for manuals giving exact instructions for erecting the structure, something more easily read by the layman than a blueprint, which would assist the contractor in solving problems which a blueprint could not reach.

In Georgia, there are at least twenty-five or thirty large "foundry and machine" companies. It can be said with comparative safety that these companies are not a part of the manual market. It might be found that, in some cases, a particular type of manual would be useful, but as to sales and instruction manuals, there does not seem to be much need for them in this field. The reason behind this situation is that the products of most of these companies are rough and finished castings, usually parts made for other manufacturers, and of that manufacturer's design. Since most of their work is made to order, it obviously does not require a manual. The only type of instruction that might possibly be needed is information for design engineers on the characteristics of the different types of castings which the plant is capable of turning out.

The companies from which this information was obtained are:

POTTER AND RAYFIELD
Atlanta

GOLDEN FOUNDRY AND MACHINE COMPANY
Columbus

BATTEY MACHINE COMPANY
Rome

There is in Georgia a large number of manufacturers producing items so distinct from all others that they cannot be classified in any group. A representative selection of the largest of these has been chosen for this survey. Each one will be discussed in the light of its own problems and procedures.

THE AUTO-SOLER COMPANY
Atlanta

In an interview with Mr. Wilkerson, President,
it was learned that the Auto-Soler Company is a firm

believer in manuals. Their products (different sizes of two basic machines, the Auto-Soler and the Auto-Nailer) are fully covered by manuals giving instructions for setting up the equipment, operating and maintaining it. These books are very well written and contain high grade illustrations. In addition, the company issues a number of sales brochures and pamphlets which are most attractive.

One man in this plant spends all his time writing literature on new equipment and revising the existing manuals as changes in the different models occur. An artist and a photographer are employed, when the occasion arises, to do illustrating work.

THE AUDICHRON COMPANY
Atlanta

This company, manufacturers of an electronic device which automatically gives the time over the telephone, coupled with desired advertising matter, when a certain number is called, is comparatively new and has not as yet issued any literature.

Mr. Franklin, the president, in an interview on August 12, 1946, stated that the company was planning to prepare repair manuals for use by Audichron service men in cities throughout the United States. The plan, at the present time, is for Audichron repair men to write the book, illustrating it with the help of an outside artist and photographer. Mr. Franklin stated

that he might consider having the work done by a writing company if he could be assured of a good job at a reasonable price.

It seems possible that at some time in the future a sales manual will be issued on this product telling what it will do, how it operates, and showing pictures of present installations of the equipment.

LE TOURNEAU COMPANY OF GEORGIA
Toccoa

In response to a letter of March 27, 1946, this company sent seven manuals which had been prepared to accompany Le Tourneau equipment sold to the armed forces. These manuals are War Department technical manuals, each bearing a "TM" number. A small printed card has been clipped to each book, stating the manual was "designed to fit a particular Army need, and does not conform in every respect with manuals prepared for commercial users." The card goes on to state briefly a few of these differences and concludes by saying that if these difficulties are kept in mind, the commercial user will have little trouble in using the Army book.

It seems that, sooner or later, this company, and many others that have been forced to prepare manuals in order to have their equipment accepted by the armed forces, will use this existing material as the basis for new and less drab civilian manuals. By far the greatest expense involved is in publishing the first manual; subsequent revisions would cost but little. It stands to reason then, that rather than waste

the original investment, manufacturers will revise and improve these manuals. The text, except for Army nomenclature, lubrication specifications, and similar differences, could be used in the revised manual almost verbatim. Photographs and drawings need only have civilian stock part numbers touched in, in place of Army numbers.

MILLER HYDRO COMPANY
Bainbridge

A very excellent catalog on the Miller Hydro bottle washer and sterilizer was received in response to a letter of March 27, 1946. Mr. M. H. Nussbaum, Jr., Vice-President, stated in an accompanying letter that no maintenance or operation manuals were issued but that their preparation was contemplated. The quality of the sales manual received is so high as to make it almost impossible to believe that an organization of 175 employees, such as this one, could produce it with its own facilities. It is logical, then, that they will turn to an outside agency for the preparation of future manuals.

There are many other such companies in Georgia, and data are in the hands of the author on perhaps a dozen more, but it is of no avail to repeat the same story. These three representative companies will give a good idea of the situation in companies manufacturing specialty items.

One especially significant fact which has been noticed in the study of these companies, listed here under miscellaneous, is that, regardless of size, those who have undertaken to sell their products on a national scale are much more apt to issue manuals than those who are content with a local market.

Having examined the situations existing as to industrial manuals in many Georgia companies, let us now draw some conclusions about the market which a technical writing company set up here would find.

The best attempt at ascertaining the numerical market would be only a guess. On the basis of the above facts, a cautious estimate would be fifteen technical manuals and twenty-five or thirty sales manuals in Georgia during the first year of operation. After that, the market will grow as other manufacturers are convinced that their product needs a manual to help sell it and to train purchasers in its use, and as new manufacturers spring up in Georgia.

It can be said that the market bears no relation to the number of workers employed by the manufacturer, but depends more on the intensity of the sales activities carried on. Manufacturers of radically new products, which must be sold and explained to the public, and companies engaged in a heavily competitive field, are most likely to issue sales and technical manuals. These companies, though increasing in number, unfortunately are in the minority. The largest job to be done by a technical writing company is to sell the old line manufacturers on the idea that sales and technical manuals will definitely increase their sales and that instruction books, distributed with their products, will make their customers better satisfied. When this is done, the ice is broken, and any manufacturing company of the type requiring an industrial manual will offer a fertile field of operations. It will not be hard to convince a company, already sold on manuals, that an outside service company can do the job of preparing a manual better, and often cheaper, than the manufacturer can with his own facilities.

BIBLIOGRAPHY

Textual References

- Alford, L.P., and John R. Bangs, Production Handbook, New York: The Ronald Press Company, 1945. 1676 pp.
- Bethel, L.L., F. S. Atwater, G.H.E. Smith, and H. A. Stackman, Jr., Industrial Organization and Management, New York: McGraw-Hill Book Company, 1945. 798 pp.
- Citizens Fact Finding Movement of Georgia, Georgia Facts in Figures, A Source Book, Athens, Georgia: University of Georgia Press, 1946. 179 pp.
- Knowles, Asa S., and Robert D. Thomson, Industrial Management, New York: The MacMillan Company, 1945. 791 pp.
- Stalnaker, Freer, "Perhaps You Can Use a Technical Manual," Printers' Ink, March 15, 1946, p. 34, New York, New York.
- State of Georgia - The Agricultural and Industrial Development Board, Manufacturers of Georgia, The State Engineering Experiment Station, Georgia School of Technology, December 1945. 75 pp.
- Tosdal, Harry R., Problems in Sales Management, New York: McGraw-Hill Book Company, 1939. 899 pp.

Letters Received

<u>Company</u>	<u>Writer</u>	<u>Date</u>
Air and Refrigeration Corporation	J. W. Kreuttner, Vice-President	March 27, 1946
Atlanta Stove Works	Bolling Jones, President	April 3, 1946
Batthey Machine Company	V. B. Yeargan	March 27, 1946
Berkeley Pump Company	C. E. Ewing	March 29, 1946
Bostrom-Brady Company	J. M. Vickery, Treasurer	March 30, 1946
Butters Manufacturing	W. T. Paulk, Vice-President	April 16, 1946
Centrif-Air Machine Company	J. B. Brenner, Vice-President	March 28, 1946
Continental Gin Company	R. E. Weinmeister, Sales Manager	March 27, 1946
General Fire Extinguish- er Company	Sales Manager	March 27, 1946
Georgia Consolidated Con- tracting Company		March 28, 1946
Georgia Iron Works	General Manager	March 29, 1946
Golden Foundry and Machine Company	W. S. Golden, President	March 29, 1946
Harris Foundry and Machine Company	Mr. Harris, President	April 3, 1946
Keller Machine Company	B. F. Coile	April 5, 1946
Kut-Kwick Tools	Sales Manager	April 2, 1946
Le Tourneau Company of Georgia	Mr. Ellenburg	March 27, 1946
Miller Hydro Company	Mr. Nussbaum, Vice-President	March 29, 1946

<u>Company</u>	<u>Writer</u>	<u>Date</u>
Potter and Rayfield	Illegible Signature	March 25, 1946
Tovell Construction Company		March 27, 1946
West Point Foundry and Machine Company	O. P. Roberts, Plant Manager	March 29, 1946

Interviews

<u>Company</u>	<u>Person Interviewed</u>	<u>Date</u>
Audichron Company	Mr. Franklin, President	August 12, 1946
Auto-Soler Company	Mr. Wilkerson, President	August 10, 1946
Continental Gin Company		August 10, 1946
Crawford and Slaten Company	Sales Manager	August 12, 1946
Georgia Power Company	Mr. Bowles, Superin- tendent of Equipment	August 16, 1946
H & B American Machine Company	Mr. King	August 8, 1946
Larkin Coils	Mr. Sims, Sales Manager	August 6, 1946
Le Tourneau Company of Georgia	Mr. Ellenburg	July 8, 1946
Link Belt Company	Sales Manager	August 22, 1946
The Murray Company	C. A. Pope, Sales Manager	August 16, 1946
Potter and Rayfield		August 15, 1946
Radford Elevator Company	Sales Manager	August 14, 1946
Saco-Lowell Machine Shops	Mr. Walsh, Sales Manager	August 8, 1946
W.R.C. Smith Company	A. F. Roberts	July and August 1946
United States Employment Service	John McCormick, Job Analyst	June 10, 1946
Warren Company	J. D. Harris, Sales Manager	August 8, 1946
Westinghouse Electric Company	Mr. Thos. Fuller, District Manager; Mr. J. W. Brooks, District Sales Promotion Manager	August 23, 1946

Company

Whitin Machine Works

Person InterviewedMr. M. J. Bently,
Selling AgentDate

August 8, 1946